



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/206,277	12/07/1998	DANY SYLVAIN	9-13528-43US	5285

7590 05/07/2003

SWABEY OGILVY RENAULT
1981 MCGILL COLEGE AVE
SUITE 1600
MONTREAL, QC H3A 2Y3
CANADA

EXAMINER

TSEGAYE, SABA

ART UNIT	PAPER NUMBER
----------	--------------

2662

DATE MAILED: 05/07/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/206,277	SYLVAIN ET AL.	
	Examiner	Art Unit	
	Saba Tsegaye	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: Applicant is required to update the status of co-pending patent application, cited on page 10, lines 15-20.

Claim Rejections - 35 USC § 102

2. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Allen Jr. et al. (US 6,169,735).

Referring to claim 1, Allen Jr. et al. show, in figure ^{and 6}4, a hybrid central office (Combination of 20 and 30) for serving a plurality of subscriber lines (19) ²³ while serving as a virtual access tandem to a subnetwork of central offices (10 and 22) having a connection to an ATM backbone network (26) comprising:

an inter-working bearer traffic interface (28) to the ATM backbone network (26) to permit the hybrid central office (20, 30) to receive bearer traffic from and transfer bearer traffic to any of the central offices in the subnetwork, the inter-working bearer traffic interface being adapted to convert pulse code modulated data to ATM cells and vice versa (column 6 lines 51-57);

a trunk interface to the public switched telephone network (PSTN) to permit the hybrid central office to receive PCM data from and transfer PCM data to the PSTN (column 7 lines 64 thru column 8 line 9); and

a computing module (30 co-located with 20 as explained in column 13 lines 27-54) having a signaling interface to the ATM backbone network (26) to permit the computing module (30) to send messages to and receive messages from any one of a plurality of distributed-access

Art Unit: 2662

bearer traffic interfaces respectively associated with the central offices in the subnetwork, the computing module being adapted to access information for routing inter-office calls originated at or terminated at any one of the central offices (column 12 lines 23-63).

Referring to claim 2, Allen Jr. et al. show, in figure 5, a hybrid central office (20) wherein the computing module (30) is adapted to send control messages through the signaling interface to the distributed-access bearer traffic interfaces respectively associated with the first and second central offices in the subnetwork to initiate the setup of connections through the ATM backbone network to complete an inter-office call without routing the call through the inter-working bearer traffic interface (column 12 lines 22-40).

Referring to claim 3, Allen Jr. et al. show, in figure 5, a hybrid central office (20) wherein the computing module (30) is adapted to receive ISDN User Part (ISUP) messages associated with the inter-office call and to modify the ISUP messages and forward the modified ISUP messages to an appropriate one of the first and second central offices so that the ATM backbone network is transparent to other central offices in the subnetwork (column 14 lines 47 thru column 15 line column 15 line 29).

Referring to claim 4, Allen Jr. et al. show, figure 3, a hybrid central office wherein the computing module is adapted to modify the ISUP messages by changing the an originating point code (OPC) and a destination point code (DPC) in each message and replacing a circuit identification code (CIC) associated with an originating end of the inter-office call to a CIC

Art Unit: 2662

associated with a terminating end of the interoffice call, or vice versa (column 14 lines 47 thru column 15 line column 15 line 29).

Referring to claim 5, Allen Jr. et al. show a hybrid central office wherein the inter-working bearer traffic interface supports bridges across the switch fabric of the hybrid central office for calls that originate in the PSTN and terminate at one of the central offices in the subnetwork or originate at one of the central offices and terminate in the PTSN (column 15 lines 36-43).

Referring to claim 6, Allen Jr. et al. show a hybrid central office wherein the inter-working bearer traffic interface is adapted to generate an application instance for each of the bridges across the switch fabric of the hybrid central office (column 15 lines 36-43).

Referring to claim 7, Allen Jr. et al. show a hybrid central office wherein the inter-working bearer traffic interface is adapted to terminate cached switched virtual circuits (SVCs) used to support calls that originate in the PSTN and terminate at one of the central offices or originate at one of the central offices and terminate in the PSTN (column 11 lines 6-25).

Referring to claim 8, Allen Jr. et al. show, in figure 4, a telephone subnetwork, which utilizes an ATM backbone (26) for completing switched telephone calls, comprising in combination:

Art Unit: 2662

a plurality of central offices (20, 22) connected to the ATM backbone (26) by respective interfaces (28) for converting PCM data to ATM cells and vice versa (column 6 lines 51-57), each of the central offices being respectively adapted to serve a plurality of subscriber lines (19 and 23); and

one of the plurality of central offices being further adapted to function as a virtual tandem for the subnetwork (combine 30 with 20) and to control inter-office call routing for calls that originate or terminate in the subnetwork (column 6 lines 30-42).

Referring to claim 9, Allen Jr. et al. show, figure 5, a telephone subnetwork wherein the central office is adapted to function, as a virtual tandem comprises:

a computing module (30) having a signaling interfaces to the ATM backbone (26), the computing module being adapted to perform translation and routing functions in the subnetwork (column 12 lines 22-40);

to select an inter-working bridge for calls originating in the PTSN and terminating in the subnetwork or originating in the subnetwork and terminating in the PSTN (column, 8 lines 23-39);

to send fabric control messages to the interfaces in the network to effect control of ATM circuits for transferring inter-office calls through the subnetwork (column 8 lines 10-22);

a trunk connection to the PSTN to permit completion of calls that originate in the PSTN and terminate in the subnetwork or originate in the subnetwork and terminate in the PSTN (column 7 line 64 thru column 8 line 9); and

Art Unit: 2662

an interface (28) to the ATM backbone adapted to support application instances that are associated with the inter-working bridges, a connection broker for controlling TDM-to-ATM bearer path conversions and inter-working control, and a messaging connectivity function to perform TDM-to-ATM address mapping (column 15 lines 29-43).

Referring to claim 10, Allen Jr. et al. show, in figure 5, a telephone subnetwork wherein each of a plurality of central offices (20,22) in the subnetwork is connected to the ATM backbone (26) by a single large trunk group (column 8 lines 51-57) and all inter-office calls originated at the respective central offices, except for the one adapted to function as the virtual tandem, are routed to the respective single trunk groups (column 11 lines 6-25).

Referring to claim 11, Allen Jr. et al. show a telephone subnetwork wherein the computing module (30) has access to routing information to enable the virtual tandem to route all inter-office calls that originate or terminate within the subnetwork and the fabric control messages contain origination and termination addresses as well as connection mapping information to enable the interfaces to map a virtual circuit used to transfer a call through the ATM backbone network to respective originating and terminating trunk members in the respective single large trunk groups (column 14 line 47 thru column 15 line 64).

Referring to claim 12, Allen Jr. et al. show a telephone subnetwork wherein the virtual circuits used to transfer calls through the ATM backbone are switched virtual circuits (column 11 lines 6-25).

Referring to claim 13, Allen Jr. et al. show a telephone subnetwork wherein the SVCs are cached SVCs, idle SVCs being stored in a cache and used for calls on an on demand basis (inherent in ATM networks that use SVCs).

Referring to claim 14, Allen Jr. et al. show a telephone subnetwork wherein cached SVCs used for calls between the central offices and the virtual tandem are terminated on the virtual tandem but the SVC cached are managed by the respective interfaces associated with the central offices, rather than the interface associated with the virtual tandem (column 15 lines 7-13).

Referring to claim 15, Allen Jr. et al. show a telephone subnetwork wherein the central office that serves as the virtual tandem also supports a trunk group connected to the PSTN and calls that originate in the subnetwork and terminate in the PSTN are routed to the trunk group connected to the PSTN (column 1 lines 15-26).

Referring to claim 16, Allen Jr. et al. show, in figure 6, a method of completing an inter-office call originating at a central office (20) in a subnetwork that includes a plurality of central offices (10, 22) which respectively serve a plurality of subscriber lines (19, 23), each of the central offices being connected to an ATM backbone network (26) by an interface that converts PCM data to ATM cells and vice versa (28), one of the central offices (combination of 20, 28, 30 and 18) serving as a virtual tandem for the subnetwork, comprising the steps of:

Art Unit: 2662

a) at the originating central office, formulating an IAM relating to the inter-office call, the IAM containing a destination point code of the virtual tandem (column 14 lines 47-62);

b) receiving the IAM at the virtual tandem and translating a called number in the IAM to determine a next hop destination for the call (column 14 line 62 thru column 15 line 6);

c) modifying the IAM to change an originating point code to the point code of the virtual tandem and the destination point code to the point code of the next hop destination in the call, and forwarding the modified IAM to the next hop destination for the call (column 15 lines 7-20);

d) formulating a fabric control message and sending the fabric control message through the ATM backbone to a terminating interface in the subnetwork to enable a virtual circuit through the ATM backbone to transfer the call (column 15 lines 14-20); and

e) sending a connection message from the terminating interface in the subnetwork to an interface associated with the originating central office to enable the virtual circuit for transferring the call through the ATM backbone (column 15 lines 21-43).

Referring to claim 17, Allen Jr. et al. show a method wherein the call terminates at a central office in the subnetwork and the terminating interface to which the fabric control message is sent in step d) is an interface associated with the terminating central office, the virtual circuit being enable through the ATM backbone directly between the interface associated with the originating central office and the interface associated with the terminating office (column 15 lines 36-43).

Art Unit: 2662

Referring to claim 18, Allen Jr. et al. show a method wherein the virtual circuit that is enabled is an SVC (column 11 lines 6-25) that is idle and stored in a cache (inherent in an ATM system using SVCs).

Referring to claim 19, Allen Jr. et al. show a method wherein the call terminates at a central office in the PSTN, the next hop destination for the call to which the modified IAM is forwarded in step c) is in the PSTN; the terminating interface to which the fabric control message is sent in step d) is an interface associated with the virtual tandem (column 17 lines 25-45); and the virtual circuit enabled through the ATM backbone in step e) is an SVC enabled between the interface associated with the originating central office and an interface associated with the virtual tandem (column 15 lines 36-43).

Referring to claim 20, Allen Jr. et al. show a method further including the steps of: establishing an inter-working bridge between the terminating interface and a TDM peripheral associated with a trunk connecting the virtual tandem to the access tandem (column 15 lines 36-64); and managing the Inter-working Bridge for the duration of the call (column 8 lines 10 22).

Response to Arguments

3. Applicant's arguments filed 2/27/03 have been fully considered but they are not persuasive. Applicant argues that the Examiner has a strict duty to demonstrate that the priority document (Provisional Application Number 60/083,640) teaches the features relied on the claims

Art Unit: 2662

of the instant application. The Examiner reviewed the provisional application NO. 60/083,640, and it has the same disclosure with the Patent NO. 6,169,735.

With respect to claims 1, 8 and 19, Applicant argues that Allen neither teach nor suggest that **the end office 20 can be combined with the CS-IWF 30 or that the combination could function as a hybrid central office. Further, applicant argues that “integrated” could only interpret to mean, “co-located”**. The argument is acknowledged but is not convincing. This is so because the CS-IWF 30, as the Applicant admitted, has a computing module and integrated (one skilled in the art could not only interpret “integrated” to mean “co-located”, but also to mean “part together” or “join ”) with end office 20, 22. Therefore, the end office 20 can combined with the CS-IWF 30 and the combination could function,as a hybrid central office.

Further, Applicant argues that **the virtual tandem switching system in accordance with Allen is not adapted to originate bearer traffic**. The Examiner disagrees with the Applicant contention. Allen clearly discloses the inter-working bearer traffic interface permits the hybrid central office to receive bearer traffic from the transfer bearer traffic to any of the central offices in the sub-network (column 8, lines 1-9).

Applicant, further, argues that **the virtual tandem switching system of Allen does not include a trunk interface to the PSTN**. The argument is again acknowledged but is not convincing. This is so because Allen clearly teaches that the T-IWF 28 is Succession Multi-service Gateway and the T-IWFs are distributed throughout the PSTN with a T-IWF 28 corresponding to each end office 20, 22. Further, Allen clearly stated that the invention relates to tandem switching systems for use within a PSTN network.

Art Unit: 2662

With respect to claim 2, Applicant argues that Allen fails to teach a structure that would permit calls to be routed by a hybrid end office between other end offices connected to the network without routing the call through the inter-working bearer traffic interface that connects the hybrid end office to the ATM backbone network. The argument is acknowledged but is not convincing. Allen clearly teaches this feature at column 12, lines 22-40.

With respect to claims 3, 4 and 11, Applicant argues that Allen fails to teach a hybrid central office adapted to receive ISDN messages associated with inter-office calls and to modify the ISUP messages and forward them to a terminating central office. The argument is again acknowledged but is not convincing. Allen teaches that CS-IWF 30 and T-IWF 28 are physically integrated into the ATM edge switch (hybrid central office); they maintain a one to one relationship (column 13, lines 45-54). Therefore, Allen does teach the hybrid central office (CS-IWF 30 and T-IWF 28) adapted to receive ISDN messages associated with inter-office calls and to modify the ISUP messages and forward them to a terminating central office.

With respect to claims 5, 6, 9, 15, 17 and 20, Applicant argues that Allen fails to teach a hybrid central office wherein the working bearer traffic interface supports bridges across the switch fabric to the hybrid central office for calls that originate in the PSTN and terminate at one of the central offices in the subnetwork or originate at one of the central offices and terminate in the PSTN. The examiner disagrees with the Applicant assertion. The trunk interworking function device of Allen provides an interface between the hybrid central office (20, 22, CS-IWF) and the ATM network 26. T-IWF also includes a functions of ATM-to-TDM and TDM-to-ATM conversion; the T-IWF converts end office 20, 22 voice trunks from TDM channels to ATM cells.

Art Unit: 2662

With respect to claim 10, Applicant argues that Allen fails to teach that all inter-office calls originated at the respective central offices, except for the one adapted to function as the virtual tandem are routed to the respective single large groups. The argument is acknowledged but is not convincing. Allen clearly teaches this feature at column 11, lines 6-25.

With respect to claims 7, 12-14 and 18, Applicant acknowledges that Allen teaches the use of switched virtual circuits.

With respect to claim 16, Applicant argues that Allen fails to teach a method in which a hybrid central office serves as a virtual tandem for the subnetwork and that an originating central office in the subnetwork formulates an IAM relating to the inter-office call, the IAM containing a destination point code of the hybrid central office that serves as the virtual tandem. The argument is acknowledged but is not convincing. Allen clearly teaches, in fig.6, that end office A initiates an SS7 IAM message containing among other information: called telephone number; signaling transfer point routing address of CS-IWF 30 (that have a unique point code); and trunk identification.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2662

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saba Tsegaye whose telephone number is (703) 308-4754. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (703) 305-4744. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

ST
May 3, 2003


HASSAN KIZOU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600